Exhibit E

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK
Case No. 1:20-cv-01106-LGS
----------x
KEWAZINGA CORP.,
Plaintiff,
-against-
GOOGLE, LLC,
Defendant.
----------x
November 16, 2020
10:11 a.m.

Remote Videotaped Deposition
of JEFFREY LUBIN, an Expert Witness in
the above-entitled action, located in
Princeton, New Jersey, taken Via Zoom
before Dawn Matera, a Shorthand Reporter
and Notary Public.

* * *

Job No. CS4338777

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~oOo~

STIPULATIONS

IT IS HEREBY STIPULATED AND AGREED, by and among counsel for the respective parties hereto, that the filing, sealing and certification of the within deposition shall be and the same are hereby waived;

IT IS FURTHER STIPULATED AND AGREED that all objections, except as to form of the question, shall be reserved to the time of the trial;

IT IS FURTHER STIPULATED AND AGREED that the within deposition may be signed before any Notary Public with the same force and effect as if signed and sworn to before the Court.

* * *

Lubin

THE VIDEOGRAPHER: Good morning. We are going on the record at a.m. on November 16th, 2020. Please note the microphones are sensitive and may pick up whispering, private conversations and cellular interference. Audio and video recording will continue until all parties agree to go off the record.

This is media number 1 of the video deposition of Dr. Jeffrey Lubin taken by counsel for defendant in the matter of Kewazinga Corporation versus Google, LLC filed in the United States District Court for the Southern District of New York, case number 1:20-cv-01106-LGS.

This deposition is being held at multiple locations via videoconference. My name is Jonathan Popham from Veritext and I am the videographer. The court reporter is Dawn Matera, also from Veritext.

I am not authorized to

Lubin

administer an oath. I am not related to any party in this action, nor am I financially interested in the outcome.

Counsel will now please state their appearances and affiliations for the record.

MR. DESAI: On behalf of plaintiff Kewazinga Corp., this is Stroock Stroock & Lavan. And also on the line on behalf of Kewazinga Corp. is Ian DiBernardo, also of Stroock & Stroock & Lavan.

MS. CHEN: Good morning. This is Emily Chen representing Google, Inc. with the law firm of Desmarais LLP. With me on the line are my colleagues Ameet Modi and David Frey.

THE VIDEOGRAPHER: Okay. Anyone else?

If that's everyone, will the court reporter please swear in the witness.

JEFFREY LUBIN, having been first duly sworn by Dawn Matera, a Notary

Lubin

So a matrix is also interchangeable with array for the purpose of this, for the purpose of these patents and in general. And whether or not a subarray is used, I think that meaning is well known to a POSITA and very clearly applies to the things like the sets of concentric rings as well as to other collections of what are, you know, called arrays here, but are also to be considered subarrays.

Q. Did you come up with your definition of "array of cameras" before or after you reviewed Figure 11?

MR. DESAI: Objection to form.

A. As I said all along I came up with the definition based on general knowledge of the term and then I made sure that it was consistent with these various figures and discussions.

And so, you know, that's how I will continue to answer that question.

Q. The patent refers to -- strike that.

Lubin

In Figure 11 of the '325 patent, the patent refers to 12-1, 12-2 and 12-n as cylindrical arrays, right?

A. Yes.

Q. And Figure 11 is a top-down view of those cylindrical arrays; is that right?

A. That's right.

Q. And each circle is described as an array, correct?

A. I don't recall if each circle is, but it could be. So each ring of cameras is an array. The vertical assembly of those rings in the cameras is an array that is composed of those ring-shaped arrays or as we're calling them subarrays.

And then the additional rings are also arrays, but are also considered subarrays of a larger array that is formed as these rings are incorporated or added or put into place in place of the other rings that are taken away, according to how this is described.

Lubin

Q. Turning to column 19 of the '325 patent at line 7, do you see that it says, "A plurality of cylindrical arrays 121-1 through 121-n of differing diameters comprising a series of cameras 14 may be situated around an environment comprising one or more objects 1200, one cylindrical array at a time."

Do you see that?

A. Yes, I do.

Q. The patent refers to the cylindrical arrays -- strike that.

The patent uses the word "plurality," right?

A. Plurality of rings, that's what you're referring to?

Q. That's right. A plurality of cylindrical arrays; do you see that?

A. Line 7, I guess, on column 19.

Q. That's right.

A. Okay, yeah.

Q. The patent doesn't refer to those multiple arrays as one array here; is that fair?

Lubin

MR. DESAI: Objection to form.

A. Not explicitly here, but if you look at the figure, if you look at Figure 11 -- let me just familiarize myself, instead of just speaking from memory -- you will see this number 10, that refers to that selection of cylindrical arrays. You see that 10 with the arrow.

If you go back to Figure 1, that 10 is explicitly referred to as an array and it is comprised of the same idea, those number 12 arrays. In this case they are rail arrays. But those are individual arrays. And number 10, the extent of those individual arrays is also an array.

So it's the exact same thing in Figure 11 and in the description of it, whether or not -- whether or not the word "array" is used to refer to those concentric cylinders, it's still, there is no other way to understand it, especially when you consider that it refers back to Figure 1.

Lubin

Q. Would another way to understand it be that they are a plurality of cylindrical arrays?

MR. DESAI: Objection to form.

A. They can be both and they are both. A plurality of cylindrical arrays in this case is an array on its own, on its own merit.

Q. So in your view there is no distinction between a plurality of arrays and a single array; is that fair?

MR. DESAI: Objection to form. Mischaracterizes testimony.

A. Yeah, I would say in general a plurality, a plurality of arrays is always an array. But when they are assembled in this way for this purpose, they become an array by -- there is no other way to interpret it.

Q. In the embodiment represented by Figure 11, an array of cameras is not composed of rings of different circumferences; is that fair?

A. No. An array -- what was the

Lubin

beginning of that question again?

Q. In the embodiment represented by Figure 11, an array of cameras is not composed of rings of different circumferences; is that fair?

MR. DESAI: Objection to form.

A. You're specifically asking about rings of different circumferences or cylinders of different circumferences?

Q. I apologize. Let me clarify.

My question is: In the embodiment represented by Figure 11, an array of cameras is not composed of cylinders of different circumferences; is that fair?

MR. DESAI: Objection to form. Misstates the testimony.

A. Yeah, that's not fair. As I previously testified, that ring of cylinders is itself also an array.

And in fact, that point is driven home even more by the fact that when you're, you know, in some ways of navigating through this array, you can

Lubin

just as easily navigate along a ring as you can along a radius.

The indices of these arrays, allows you, the way it's all constructed, it doesn't matter whether you're going -- whatever direction you're going doesn't matter. You're indexing -- you're indexing into this larger array and thereby going on to different paths that include along the circumference of an individual ring. And it includes going up a cylinder and also includes going inward or outward along a radius. Those are all directions in this multidimensional array and it's constructed by a plurality of the cylindrical arrays.

Q. Referring again to Figure 11. The specification of the patent does not describe Figure labeled 10 in the specific context of Figure 11; is that fair?

MR. DESAI: Objection to form.

A. The way I understand the

Lubin

writing of patents is that when you refer to Figure 1, continually reference or whatever the expression is to Figure 1, then it includes the like terms from Figure 1 and there would be no reason to have that 10 hanging out there if it didn't refer to the same thing.

Why would there be a 10? Just it's not a drafting error. It refers to something real. It refers to the entire set of cylindrical arrays. And if you look at the description of the embodiment described with respect to Figure 1, it explicitly calls that label 10 an array.

So, you know, I don't think it's true that the description of the embodiment of Figure 11 does not refer to those things as an array for the reasons that I've just described.

Q. In the '325 patent, please turn to column 18 at the bottom, around line 59, where it reads "Multiple arrays."

Do you agree that the section starting at the bottom of column 18

Lubin

your opinion is different from the seamlessness that's described in the Burt patent; is that fair?

A. It's different than some of the descriptions in there, yes.

Q. How so?

A. Well, as I've already said, the -- when you're trying to -- you know, seamlessness is, since it's a perceptual issue, there is no absolute seamlessness, and so it's really a question of, you know, to what extent it is to interfere with the task at end.

And if the task at end is navigating through an environment, there is different requirements. You do not want to have things jump at one moment to the next, perhaps. But, you know, it's, I would say, a less stringent requirement than seamlessness in images.

Q. So I can't recall the exact term, but is there a way to quantify a person's ability to perceive changes, small changes?

Lubin

A. Yes, in fact a lot of my early work at Sarnoff was about that. One unit is called the adjust noticeable difference.

And actually I did an analysis, I wrote a paper with another guy named Gerry Alphonse, I don't know if I included it in my CV, but it was about perceptual requirements of seamlessness in tiled large-screen displays. And it started out from the perspective that there is no such thing as complete seamlessness, because there is a seam between those displays. The question is how close do they have to be for it to not bother.

And it's certainly subjective in a lot of ways, so that if you want to just really not ever be able to see that there is a seam, that is a much more stringent J&D requirement than just having it be not objectionable.

And so, you know, that's how I've always viewed the idea of

Lubin

seamlessness. In anything that's consumed by the human visual system, it, you know, it's a relative thing.

Q. For the record, could you spell the name of your coauthor on that paper?

A. Yeah, it's Gerald, G-E-R-A-L-D, Alfonse, A-L-P-H-O-N-S-E.

And maybe just to telegraph a little bit, you know, there is certainly no requirement for seamlessness at all in mosaicing, and in fact, in some applications you specifically do not want any kind of attempt to blur the seam.

For example, in the aerial image, you know, analysis example that I gave before the break, where these image analysts are looking at satellite images and they are lined up so that they are more or less matching, they don't want anything to be done to remove any information to obstruct or distort any information at all in these images, even at what's not only on the edges between, between these different plates or what do

Lubin

they call them, these images.

So, you know, in that case, and also, you know, it helps you understand where you are in the collection of images for people to see some edges between them. You know, some see where one starts and the other ends. And so that is certainly an example of mosaicing and yet there is no requirement for seamlessness. In fact, there is a requirement for not seamlessness in those applications.

And so my opinion of whether or not mosaicing has to include any attempt to make things seamless is really informed by those kinds of applications and in my experience.

Q. In this example of aerial imagery, when the mosaic is being put together, do they also go through what the Burt patent describes as the mosaic composition process?

MR. DESAI: Objection to form.

A. There is the alignment process

Lubin

and then, you know, it's a composition process in the sense that these images are being laid out on top of each other or near each other.

Q. And the process of being laid out on top of each other or near each other, how does that work?

A. It works in a lot of different ways. One typical way is to just pick an edge between the two images and if there is no overlapping area, just to allow one image to go to that edge from its -- from the side that it is mainly on. And then the other image to go to that edge the side that it's on. That is a good way to avoid distorting the view.

You could also -- you could also average the pixels that might reduce the resolution in those areas, so...

Q. And do you agree that mosaicing as used in these patents requires some effort to reduce seams in the resulting image?

A. No. Not at all. You know, I

Lubin

know that, you know, there were a number of examples given in the Burt and in these patents that do suggest that you would want to reduce the visibility of seams, but speaking from, you know, from my experience in mosaicing, and from the ordinary definition of mosaicing, there is no need for that.

And in fact, if you look at the Burt patent, that these, that are incorporated by reference into --

(Off the record.)

THE VIDEOGRAPHER: Back on the record at 4:44 p.m.

BY MS. CHEN:

Q. Dr. Lubin, before the break I just asked a question, and the question is, do you agree that mosaicing as used in these patents requires some effort to reduce seams in the resulting image?

MR. DESAI: Objection to form.

A. Yeah, I believe I started saying that I don't, and then I gave a number of reasons. And I assume that

Lubin

those reasons I already gave are still on the record, correct?

Q. Yes.

A. So the thing I would like to add to that is, even though the Burt patent describes many cases in which attempting to reduce seams is desirable, it's interesting and important to note that the claims themselves, and claim 1, even, in particular, doesn't say anything at all about reducing visibility of seams.

And that of itself suggests to me that it's not a requirement, even the attempt to reduce the visibility of seams is not at all a requirement of mosaicing as he constructed it, and as I observed in my own experience, both in work and in the world at large.

Q. Do you agree that the mosaicing process taught by the Burt patent includes image processing aimed at reducing seams in the resulting image?

MR. DESAI: Objection to form.

Lubin

A. In some embodiments, yes. But as I've just testified it does not require it or else it would have been in the first claim.

Q. And to be clear, my question is whether the mosaic process taught by the Burt process includes image processing in different reduced seams in the resulting image?

A. I was talking about claim 1 in the Burt patent.

Q. So your opinion is that in the methods and systems taught by the Burt patent, the image processing takes place during the composition process, but does not require reduction of seams; is that fair?

MR. DESAI: Objection to form.

A. No. I am saying you don't need to do that image processing. You may do image processing for other reasons, but I believe the image processing to which the Burt patent refers is there specifically to attempt to reduce the visibility of

Lubin

Q. Yes.

A. Well, I think so, but if you want to tell me that is the case, I will believe you.

Q. You don't have to take my word for it. We can reference the patent.

A. In '234, claim 4 talks about mosaic imaging.

Q. Yes. For example, '234, claim 3 also discusses mosaic imagery, right?

A. Yes, I thought you were asking about the term "mosaicing," though.

Q. I apologize. Do you agree that the term "mosaic imagery" is used in claim 3 of the '234 patent?

A. Yes, I do.

Q. And is it your opinion that the claim to be construed here is "mosaicing" and that term can also be modified to describe mosaic imagery?

MR. DESAI: Object to form.

A. Let me look at what I wrote about this because I don't remember off the top of my head.

Lubin

Can you ask that question again?

Q. The question is, is it your opinion that the construction of the term "mosaicing" can also be modified to construe mosaic imagery?

MR. DESAI: Objection to form.

A. Well, this is what I learned. That other claim terms reciting the word "mosaicing" or variants using "mosaic imagery" should be construed with the construction of the term "mosaicing" and need not be separately or additionally construed.

So that means that, you know, once the definition of "mosaicing" is agreed upon, then that informs the definition of all those other terms; mosaic imagery, mosaic images, generating mosaic images, et cetera.

Q. Okay. So going back to my question, you don't know whether or not the Kewazinga patent required a composition process?

Lubin

MR. DESAI: Objection to form. And misstates prior testimony.

A. To the extent that a claim in the Kewazinga -- in any of the Kewazinga patents is relying on mosaicing as set forth by the Burt patent, then yes, the Burt patent says that mosaicing involves an alignment process and a composition process, a combination process, composition process.

Q. Do you agree that the claim in the Kewazinga patent that cites mosaic or mosaic imagery is all in the context of what is set forth in the Burt patent?

MR. DESAI: Objection to form.

A. I'm not sure. That seems to me to be a legal question and not a claim construction question.

Q. When you evaluated the suitability of your construction of the term "mosaic," did you rely on anything other than Burt?

MR. DESAI: Objection to form.

A. Yeah, I relied on my past

Lubin

experience with image mosaics and what I've seen out in the world with image mosaics and mosaicing.

Q. Is your past experience with image mosaicing consistent or inconsistent with what is disclosed in Burt?

MR. DESAI: Objection to form.

A. I would say it's consistent. It says that, you know, there is an alignment process and a composition process, that seems straightforward to me as the two pieces that comprise the mosaicing process.

The additional optional task of attempting to create seamlessness has never been a part of my understanding of what mosaicing is about, well before I ever looked at any of these patents and nothing in the patents led me to believe otherwise.

Q. Do you have an opinion about whether the presence or absence of image processing aimed at reducing seams in

CERTIFICATION

I, DAWN MATERA, a Notary Public for and within the State of New York, do hereby certify:

That the witness whose testimony as herein set forth, was duly sworn by me; and that the within transcript is a true record of the testimony given by said witness.

I further certify that I am not related to any of the parties to this action by blood or marriage, and that I am in no way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 19th day of November, 2020.

Dawn Matera

DAWN MATERA

INDEX

EXHIBITS

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November 20, 2020
Jeffrey Lubin
jxlubin@gmail.com

Case Name: Kewazinga Corp. v. Google, LLC

Veritext Reference Number: 4338777

Witness: Jeffrey Lubin Deposition Date: 11/16/2020

Dear Sir/Madam:

Enclosed you will find a transcript of your deposition.

As the reading and signing have not been expressly waived, please review the transcript and note any changes or corrections on the jurat/errata sheet included, indicating the page, line number, change and reason for the change. Sign at the bottom of the sheet in the presence of a notary except in California where you are signing under penalty of perjury and email the errata sheet back to us at the address shown above.

If the jurat is not received within thirty days of your receipt of this letter, the reading and signing will be deemed waived.

Sincerely,

Production Department

Encl.
Cc: Emily Chen, Esq.
Saunak Desai, Esq.

Kewazinga Corp. v. Google, LLC
Jeffrey Lubin
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